

CLAIMS

What is claimed is:

1. A voltage converter comprising:
 - a direct current input voltage source;
 - a voltage transforming element having an input coupled to the input voltage source and an output presenting a voltage signal thereon;
 - a switching element coupled to the voltage transforming element for intermittently interrupting current flow from the input voltage source to the voltage transforming element;
 - a converter output coupled to the output of the voltage transforming element via a rectifier and adapted to present a converter output voltage to a load; and
 - a programmable controller having an input coupled to the converter output and an output coupled to the switching element, the programmable controller operative to control switching states of the switching element in accordance with preselected, programmable operating parameters of the voltage converter.
2. The converter of claim 1 further comprising a fault prevention circuit coupled between the programmable controller output and the switching element.

3. The converter of claim 1 further comprising a supplemental voltage transforming element output coupled via a supplemental rectifier to a supplemental converter output adapted to present a supplemental converter output voltage to a supplemental load, wherein the supplemental converter output voltage is different from the converter output voltage.

4. The converter of claim 1 wherein the programmable controller controls the switching states of the switching element via a pulse-width-modulated switching signal.

5. The converter of claim 1 further comprising programmable controller protection circuitry coupled between the converter output and the programmable controller input.

6. The converter of claim 1 wherein the converter output is adapted to be coupled to a vacuum fluorescent display.

7. The converter of claim 3 wherein the supplemental inverter output is adapted to be coupled to a vacuum fluorescent display.

8. A DC/DC voltage converter comprising:
- a direct current input voltage source;
 - a transformer having primary and secondary windings, the primary winding being coupled to the input voltage source;
 - a switching transistor coupled to the primary winding and operative in a first switching state to allow current flow from the input voltage source through the primary winding and operative in a second switching state to inhibit said current flow;
 - a converter output coupled to the transformer's secondary winding via a rectification circuit and adapted to present a converter output voltage to a load; and
 - a microprocessor-based controller having an input coupled to the rectification circuit and an output coupled to the switching transistor, the controller operative to selectively place the switching transistor in its first and second switching states in accordance with preselected, programmable operating parameters of the voltage converter.

9. The converter of claim 8 further comprising a fault prevention circuit coupled to the controller output and to the switching transistor, the fault protection circuit including a shunting transistor operative to divert base drive current from the switching transistor upon the occurrence of a controller fault.

10. The converter of claim 9 further comprising a Zener diode voltage clamp coupled to the controller input to maintain voltage input to the controller within preselected limits.

11. The converter of claim 8 wherein the controller selectively places the switching transistor in its first and second switching states in accordance with a pulse width modulated signal on the controller output.